



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,764	08/04/2003	Yihua Chang	4022-000009	6497

27572 7590 05/27/2005

HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. BOX 828  
BLOOMFIELD HILLS, MI 48303

EXAMINER

RAYFORD, SANDRA M

ART UNIT	PAPER NUMBER
----------	--------------

1772

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/633,764

Applicant(s)

CHANG ET AL.

Examiner

Sandra M. Nolan-Rayford

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: citation forms.

S.M. Nolan-Rayford 5-25-05

Sandra Rayford 5-27-05

## **DETAILED ACTION**

### ***Claims***

1. Claims 1-54 are pending.

### ***Amendment***

2. The amendment of 22 February 2005 ("the last response") was sent in reply to the office action of 21 October 2004 ("the last office action").

### **New Objection**

#### ***Claim Objection***

3. Claims 1-54 are objected to because of the following informalities: the term "nano-filler" implies that the fillers used are of nanometer size. However, the new language in claims 1, 13 and 28 states that one of the filler particles' dimensions is 0.1 to 1.5 microns in size. Please clarify.

Appropriate correction is required.

### ***Rejections Maintained***

4. The 35 USC 103 rejection of claims 1-27, as unpatentable over Watkins (WPO-02/36196A1) in view of Frisk (US 6,117,541), is maintained for reasons of record.
5. The 35 USC103 rejection of claims 28-54, as unpatentable over Watkins in view of Frisk, Fibiger (WO 00/47657) and Bagrodia (WO 01/92388A2), is maintained for reasons of record.
6. The obviousness-type double patenting rejection of claims 1-54, as unpatentable over SN. 09/704881 in view of Frisk, is maintained for reasons of record.

***Response to Arguments***

7. Applicant's arguments filed in the last response have been fully considered but they are not persuasive.

On page 14 of the last response, applicants argues that Frisk uses nanofillers to increase the stiffness of its articles.

However, that argument ignores the fact the Watkins—which is admittedly like applicants' technology (see the bottom of page 14)—is dealing with flexible materials.

Since the references are applied in combination, their combined teachings must be considered. That is, Frisk's fillers could be used in proper quantities to improve various properties—including the heat stability—of the Watkins materials without making them stiff.

The combination rejection is maintained as proper.

On page 15, applicants argue that the combination of Watkins, Frisk, Fibiger and Bagrodia does not render claims 28-54 obvious because the disclosure of 10+ layers does not remedy the "shortcomings" of the Watkins and Frisk references and the use of 10 microlayers in a membrane is not suggested thereby.

However, the Fibiger and Bagrodia references were cited merely to show clay fillers in multilayer articles. Calling the 10+ layers "microlayers" does not change the fact that they are layers.

The reference to Fibiger's articles weighing more than one kilogram was inadvertent. The examiner regrets any confusion caused thereby.

On page 16, applicants argue that the double patenting rejection is not proper, but gives no detailed reasons.

In the absence of convincing arguments and/or a terminal disclaimer, the rejection is maintained for reasons of record.

### ***Final Rejection***

8. Applicant's amendment necessitated the new ground(s) of objection/rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

9. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

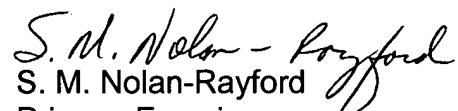
### ***Conclusion***

Any inquiry concerning this communication should be addressed to Sandra M. Nolan-Rayford, at telephone number 571/272-1495. She can be reached Monday through Thursday, from 6:30 am to 4:00 pm, ET.

Art Unit: 1772

If attempts to reach the examiner are unsuccessful, contact her supervisor,  
Harold Pyon, at 571/272-1498.

The fax number for patent application documents is 703/872-9306.

  
S. M. Nolan-Rayford  
Primary Examiner  
Technology Center 1700

10633764(20050525)